United States Marine Corps
Command and Staff College
Marine Corps University
2076 South Street
Marine Corps Combat Development Command
Quantico, Virginia 22134-5068

MASTER OF MILITARY STUDIES

A Knowledge Management Case Study:
The First U.S. Navy Expeditionary Strike Group (ESG-3)
to Implement Knowledge Management

SUBMITTED IN PARTIAL FULFILLMENT
OF THE REQUIREMENTS FOR THE DEGREE OF
MASTER OF MILITARY STUDIES

Lieutenant Commander George Dewey Davis III

AY 07-08

Mentor and Oral Defense Committee Member: _Paul D. Gelpi, Jr._
Approved: _____
Date: _30 Apr 08_

Oral Defense Committee Member: _PATRICE M. SCANLON_
Approved: _Patrice M Scanlon_
Date: _30 Apr 08_

	Form Approved OMB No. 0704-0188
Report Documentation Page	*Form Approved* *OMB No. 0704-0188*

Public reporting burden for the collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to a penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.

1. REPORT DATE **2008**	2. REPORT TYPE	3. DATES COVERED **00-00-2008 to 00-00-2008**
4. TITLE AND SUBTITLE **A Knowledge Managemetlt Case Study: The First U.S. Navy Expeditionary Strike Group (ESG-3) to Implement Knowledge Management**		5a. CONTRACT NUMBER
		5b. GRANT NUMBER
		5c. PROGRAM ELEMENT NUMBER
6. AUTHOR(S)		5d. PROJECT NUMBER
		5e. TASK NUMBER
		5f. WORK UNIT NUMBER
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) **United States Marine Corps Command and Staff College,Marine Corps University,2076 South Street, Marine Corps Control Development Command,Quantico,VA,22134-5068**		8. PERFORMING ORGANIZATION REPORT NUMBER
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)		10. SPONSOR/MONITOR'S ACRONYM(S)
		11. SPONSOR/MONITOR'S REPORT NUMBER(S)

12. DISTRIBUTION/AVAILABILITY STATEMENT **Approved for public release; distribution unlimited**

13. SUPPLEMENTARY NOTES

14. ABSTRACT

15. SUBJECT TERMS

16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT **Same as Report (SAR)**	18. NUMBER OF PAGES **37**	19a. NAME OF RESPONSIBLE PERSON
a. REPORT **unclassified**	b. ABSTRACT **unclassified**	c. THIS PAGE **unclassified**			

Standard Form 298 (Rev. 8-98)
Prescribed by ANSI Std Z39-18

Executive Summary

Title: Knowledge Management Case Study for Expeditionary Strike Group Three (ESG 3)

Author: Lieutenant Commander George Dewey Davis, III, United States Navy

Thesis: Expeditionary Strike Group 3 (ESG 3) was the first Expeditionary Strike Group to employ Knowledge Management. This case study describes the procedures executed during the staff's deployment from February 2006 to February 2007 in order to create new knowledge.

Discussion: This paper summarizes the U.S. Navy's Knowledge Management implementation for Expeditionary Strike Group Three. ESG3 wore two hats: Commander, Task Force 59 (CTF 59) and Expeditionary Strike Group 3. The unit's principal mission focused on the Strike Group's passage through the western Pacific region and taking station in the Northern Persian Gulf. Exchanging tacit and explicit knowledge through the Socialization, Externalization, Combination, and Internalization (SECI Model) phases enabled the staff to effectively create and share organizational information. Using Nonaka's SECI Model facilitated the staff's understanding of how to create new knowledge.

Conclusion: This case study documents the knowledge management technique implemented for an Expeditionary Strike Group. From the deployment of a seven ship Strike Group, to the appointment as the theater's consequence management coordinator, to liberating American citizens from danger in Lebanon, knowledge management provided the ESG3's commander the opportunity to formulate the best decisions based on the actionable information. Therefore, the use of a Knowledge Management Officer (KMO) and Knowledge Management (KM) procedures used by the ESG3 staff enabled personnel to create new knowledge during their deployment.

DISCLAIMER

Illustrations

Page

Tables

Page

Table of Contents

"Successful organizations will be those that consistently create new knowledge, disseminate it widely throughout the organization, and quickly embody it in new products, practices, and technologies."

~ Ikujiro Nonaka, The Knowledge Creating Company

Introduction

The "global climate has forced U.S. and coalition commanders to require the timeliest and most reliable information is available to ensure all their resources are in the right place and the right time."[1] In this endeavor, the U.S. Navy created a new Military Occupation Specialty (MOS): the Information Professional (IP) Community (1600 designator[2]). This new community remains open to all Navy Officers to convert to, provided the officer has a technical background and a bachelor's degree. This new community has several responsibilities including acquisition officers, Commanding Officers, Executive Officers or Officers-in-Charge of a communication stations, assignment in various network management and network security positions, knowledge management officers, and space command assignments.

The Navy first provided a knowledge management officer (KMO) billet to the Numbered Fleet Commanders. The KMO on the Numbered Fleet Commander staff was responsible for multiple deployable fleet units. Following the Numbered Fleet assignments in 2004, KMOs' first sea assignments were with Carrier Strike Groups (CSGs). The KMOs' successes in both cases led to the eventual assignment of KMOs to Expeditionary Strike Groups (ESGs).

After completing the Navy's KM course and was ready to implement the KM program with ESG3. Presenting the benefits of KM to the staff was an important preliminary step. Establishing Communities of Practice (COP) united the staff in seeking ideas, finding solutions, sharing experiences, gleaning lessons learned and sharing areas of concern. In the beginning, the gradual insertion of KM in the organization began with simple projects, such as watch

assignments, watch qualification packages, and various standard operating procedures,[3] were completed. These projects were non-confrontational and empowered staff personnel to be part of the solution.

As a matter of military and U.S. Navy protocol, the Commander had the final word to ensure his priorities and mission were the focus of our efforts. Timely resolutions resulted when the Commander's expectations were stated during the COPs. Projects began to increase, both in scope and in numbers, the efficiency of the staff became apparent. The Anthology was the capstone project during our deployment. This Anthology was a comprehensive database of all the operations, exercises, and events involving ESG3 over the course of the yearlong deployment. The purpose of the Anthology was to assimilate this information into a single depository from which the staff could easily extract information needed. This process afforded all staff members access to vital information on to the computerized Anthology rather than placing information in their personal computerized filing system. The staff evaluated the Anthological project periodically to show how convenient, efficient, and expedient information could flow among them. The project began to grow exponentially as additional ideas on the project came forward. Maintaining information superiority and information dominance, as prescribed by the Maritime Strategy,[4] is made possible though people and processes, which are enabled by technology -- three essential elements of knowledge management.

Methodology

This thesis uses a case study approach to explore the implementation of KM using the SECI Model within Expeditionary Strike Group 3 (ESG3). A case study approach enables a researcher to profile "an exploration of a "bounded system" or a case (or multiple cases) over time through detailed, in-depth data collection involving multiple sources of information rich in

context. This bounded system is bounded by time and place, and it is the case being studied – a program, an event, an activity, or individuals."[5] Thus, this paper will analyze and describe the process the ESG3 personnel went through and the KM program they used in order to create new knowledge and establish communities of practice. Furthermore, because a case study is limited by time, the scope of this case is limited to the group's one-year deployment, after which time the command disestablished.

What is Knowledge Management?

Definitions

Most definitions of KM are similar in context and typically tailored specifically to conform to an organization. Some definitions of KM include:

CIO Magazine	"Knowledge Management is the process through which organizations generate value from their intellectual and knowledge-based assets. Most often, generate value from such assets invokes codifying what employees, partners, and customers know, and sharing that information among employees, departments, and even with other companies in an effort to devise best practices."[6]
Karl Wiig	"Knowledge consists of truths and beliefs, perspectives and concepts, judgments, and expectations, methodologies and know-how."[7]
Bryan Bergeron	Knowledge Management is "a variety of general and specific technologies for knowledge collection (e.g. data mining, text summarizing, the use of intelligent agents, and a variety of information retrieval methodologies), knowledge storage and retrieval (e.g. knowledge bases and information repositories), and knowledge dissemination and application (e.g. intranets and internets, groupware, decision support tools, and collaborative systems)."[8]
U.S. Navy's Network Warfare Command (NETWARCOM)	KM is "a collection of processes, people, and technology that governs the creation, dissemination and leveraging of knowledge to fulfill the mission of the organization."[9]
U.S. Army's Army Knowledge Management (AKM)	KM "delivers improved information access and sharing while providing "infostructure" capabilities across the Army so that warfighters and business stewards can act quickly and decisively. AKM connects people, knowledge, and technologies."[10]

Table 1: Definitions of Knowledge Management

Knowing what information is vital for an organization and effectively managing that information in order to create and disseminate knowledge throughout the organization is Knowledge Management. The idea of knowledge is not new; however, it was not until the 1980s

that the expression and theory of knowledge management became a part of the business lexicon.

Karl Wiig coined the phrase "knowledge work" or "knowledge worker" in 1960.[11] Today's

Knowledge Management scholars include:

- *Thomas Davenport*: President's Chair in Information Technology and Management at Babson College, New York; an author and co-author of ten books on management; and, earned a Ph.D. Sociology from Harvard[12]

- *Larry Prusak*: Executive Director of IBM's Institute of Knowledge Management; has extensive consulting experience within the U.S. and internationally; helps firms leverage and optimize their information and knowledge resources[13]

- *Ikujira Nonaka*: Professor of Japan's Advanced Institute of Science and Technology (JAIST); created the Socialization, Externalization, Combination and Internalization (SECI) Model describing the spiral of tacit to explicit knowledge; and author[14]

- *Peter Drucker*: Author of 39 books; profound leader in the development management principles; 25 years as a Professor of Management at various well-known universities; and "considered by many as the father of KM."[15]

- *Jay Liebowitz*: The first Knowledge Management Officer at NASA Goddard Space Flight Center; Professor at Johns Hopkins University Carey Business School and Department of Information Technology; author.[16]

Each has increasingly popularized Knowledge Management in the business industry.

Furthermore, companies, such as British Petroleum, Motorola, Google, IBM, 3M, Honda,

General Electric, and the U.S. Army, Navy, and Marines are delving into Knowledge

Management. Additionally, *CIO Insight* reports, "American companies will spend $73 billion on

Knowledge Management software this year and spending on content, search portals, and

collaboration technologies is expected to increase 16% in 2008, according to a recently released

report from AMR Research."[17]

Knowledge Management Process

The Knowledge Management process is a hierarchical structure illustrating five

developmental transformation stages. Those stages are Signal, Data, Information, Knowledge,

and Wisdom. The Signal Stage initiates the process and can be sourced from radio frequency,

voice, light, electrical pulses, satellites, and other catalysts. These sources are the delivery mechanisms to transfer data from a sender to receiver.

The second stage, Data, is unintelligible information or information without context. For example, 1's and 0's, 1600, 72 degrees, or $30.00 is meaningless without a context. However, with amplifying data (i.e., additional data that provides a context), one can create information. For example, 1600 Pennsylvania Ave, Washington DC, or 1600 hours are instances of amplified data that one has learned to mean the location of the White House, or the military/universal time language to indicate a specific time or 4:00 p.m. With enough information, one can transition to the Knowledge Stage.

In this stage, one gathers all available information, including one's personal experiences, and forms logical, critical, and sensible decisions. For example, based on past information obtained from the environment, one can understand that payday and 1600 at the commissary (i.e., the term for a military grocery store) result in an overcrowded environment and, therefore, wisdom would dictate the understanding that one should avoid the commissary when making future decisions about shopping at the store on payday at 1600 hours. These understandings are Information in future Knowledge Management decision-making.

Nathan Shedroff's book, *An Overview of Understanding*, provides another description of knowledge creation, in which he states Data and Information are the Producers, Information, and Knowledge are the Consumers, and Information, Knowledge, and Wisdom are the context.[18] To distinguish Information from Knowledge, the following is an example of a seasoned Navy Captain and a newly commissioned Navy Ensign: Place both officers on the bridge of a ship and provide them with the same charts, publications, views, instruments, weather conditions, and personnel. Who would make better decisions on how to get the ship underway from port, alongside a refueling ship for fuel, or, maneuver the ship for flight operations and amphibious

operations? Without question, the Captain would because he is a seasoned veteran with years of shipboard experience, learning, and understanding of safe ship navigation. His experience gives him the Knowledge. The Ensign, on the other hand, has the information in front of him, but cannot make logical decisions based on the information alone. The ensign needs to live and learn (e.g., acquire knowledge about driving ships) through practical experiences.

Scientists, surgeons, and scholars have devoted their lives to gaining experiences by studying the universe, curing or eradicating diseases, and researching in order to refine one's understanding in a field of interest. All of these endeavors depict the transformation of knowledge creation from Data, to Information, to Knowledge, to Wisdom.

Barriers to Knowledge Management

There are understandably barriers to knowledge management. Effective communication and understanding are important barriers to overcome. Clear, accurate, and timely information are indispensable and can definitely affect the efficiency of an organization. Barriers can include familiarization with diverse languages and terminology, working with different cultures, and proper alignment of staff personnel within the organization. The intent of this paper is not to dwell on the barriers of KM, but instead concentrate on the validity and value of knowledge management within the strike group.

Socialization, Externalization, Combination, Internalization (SECI) Model

To help the reader understand how the SECI model demonstrates knowledge creation, the reader first needs to understand the two types of Knowledge: Tacit and Explicit. Nonaka's SECI model separates Tacit and Explicit knowledge into four discrete, yet dynamic ways of creating and transferring knowledge. The transformation occurs via Socialization, Externalization, Combination, and Internalization (SECI) of information and experiences.[19]

Tacit Knowledge (TK)

Tacit knowledge is knowledge gained from experience; it is knowledge that resides in each person's mind.[20] Michael Polanyi, a Tacit Knowledge scholar, declares that Tacit Knowledge cannot truly be transferable because it is very difficult to articulate.[21] For example, regardless of how well someone may explain or describe something, unless a person has actually experienced it for him/herself, he or she cannot entirely understand. Further illustrating this example, a woman can tell a man everything about having a baby. Despite any explanatory description she articulates, the possibility that he will truly understand what it is like to have a baby is zero. He can generalize and sympathize with her experience, but not having personally experienced the birthing process precludes all possibility of a true understanding.

Explicit Knowledge (EK)

Explicit knowledge, on the other hand, is codified knowledge.[22] That is, it is knowledge written in books, instructions, articles, and manuscripts. There are copious volumes of information documenting experiences, lessons learned, research, case studies, and experiments that are used to create new knowledge. Reading the daily newspaper, a novel, or a map complements one's known personal knowledge, thereby expanding one's own knowledge base.

Creating Knowledge

There are three branches of the SECI Model: SECI, *Ba,* and Knowledge Assets. Figure 1 below provides an illustration of Nonaka's spiraling transfer of knowledge creation[23] from each sector of the SECI Model: Socialization (Tacit to Tacit), Externalization (Tacit to Explicit), Combination (Explicit to Explicit), and Internalization (Explicit to Tacit). The second component, *Ba,* is particularly complex to characterize and is expressed as a mutual base for knowledge sharing interactions, much like universities, shopping malls, sporting venues, and organizations enable students to interact with each other in the same environment. Lastly,

Knowledge Assets are the organization's awareness of existing computer network connectivity, assigned subject matter experts, and unique capabilities that are invaluable to the successes of the organization.

The Model

In 1991, Japanese Professor Ikujurio Nonaka, developed a widely publicized knowledge creation model illustrating the transformation of knowledge through four transformational stages: Socialization, Externalization, Combination and Internalization (SECI). These four stages describe the transformation of tacit and explicit knowledge.

Socialization	Tacit to Tacit	Conversations Apprenticeship training Observation learning
Externalization	Tacit to Explicit	Documenting Publishing books PowerPoint briefs
Combination	Explicit to Explicit	Repositories Catalogs Lessons Learned
Internalization	Explicit to Tacit	Reading Listening Researching
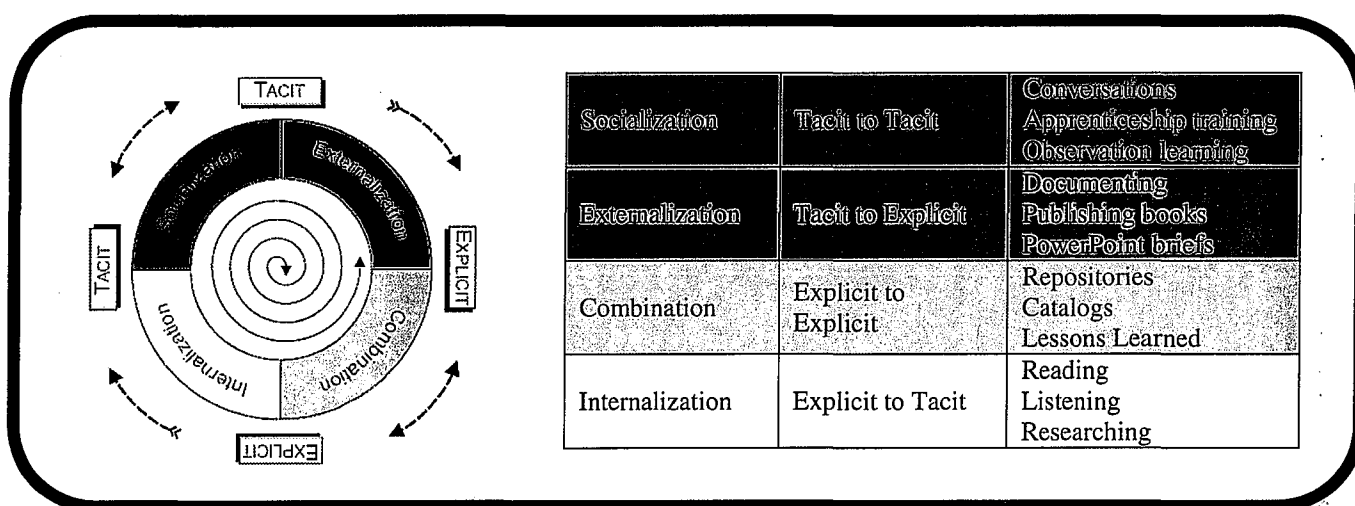
Fig. 1: SECI Model

Socialization

Socialization transfers knowledge tacit to tacit, which means exchanging information through conversation. Sitting down and talking to someone, sharing experiences, and mentoring someone as an apprentice are examples of transferring what's in one person's head to another person's head. This type of interaction is through observation, imitation, and practice, not through reading books or manuals. Cooking, woodworking, and mechanics are professions that

require reading, but are more easily learned through practical or hands-on experiences, such as watching an expert, listening, or going through the process.

Externalization

Externalization transfers tacit knowledge to explicit knowledge. One can conduct research, form an understanding, and document the conclusions. Therefore, one transfers what one has learned (tacit) into a codified format (explicit). Converting personal thought into a commonly understood language or image is the process of creating knowledge through externalization of the information. Therefore, historians, novelists, and journalists are examples of people who share knowledge in a codified manner.

Combination

The Combination Stage demonstrates explicit to explicit knowledge creation. Creating systems, such as libraries, websites, archives, media, and repositories, are examples of combination knowledge. During this phase of the model, classifying unique knowledge fields of interest into repositories facilitates access to resources; future published knowledge complements existing databases containing similar knowledge. Cataloging, for example, allows researchers to search for specific or general topics within a specific selection of information. Specifically, the Anthology, created near the end of the deployment, was a comprehensive compilation of all operations, exercises, and events involving ESG3. The purpose of the Anthology was to assimilate information into a single repository in order for the staff to benefit from the new knowledge. Traditionally, personnel in each department places their files on the computer network based on some convoluted filing system that only one person can locate. In many cases, information is necessary for others to use (e.g., for planning purposes), but because of the individual's isolation of information, other staff members had difficulty accessing certain files. However, the Anthology availed information to the entire staff.

Internalization

Internalization is knowledge creation from explicit to tacit. Reading explicit data allows one to combine new information with his or her personal information to create new knowledge. Scholars, doctors, lawyers, and many other professions spend lifetimes to perfect this trait. Years of education, researching, and on-the-job experiences accumulatively create internalized knowledge.

Organizational Environment

As mentioned in the introduction, during the 1990s, the Navy was interested in how to best leverage information technology, the development of more efficient practices for information dissemination to the fleet, the advantages of commercial resourcing, and assurance its efforts were synchronized with the prescribed alignment of the Maritime Strategy. Furthermore, at the turn of this century, the U.S. Navy created a new MOS community - the Information Professional (IP) Community, which drew from officers from all occupational specialties, provided the officer had a technical background.

In 2005, the Department of the Navy (DON) distributed a memorandum addressing the need for the DON to establish Knowledge Management.[24] This memorandum described KM as "the cornerstone of decision superiority, knowledge dominance, and information superiority."[25] The Navy's memo outlined four purposes for implementing KM throughout the Fleet:

- To broaden and expand Department awareness that KM concepts, when applied to the operational and business processes of any command, will enable significant improvements in mission accomplishment.

- To encourage commands to implement KM programs, structures, pilots, and methodologies as part of process improvement efforts.

- To assist commands with KM experience to share their experiences, lessons learned, and results to foster collaboration, enable shortened learning cycles, and assist other efforts.

- To assist commands embarking on new implementations to build upon the experiences and resources of others.[26]

In order to implement Knowledge Management, the Navy tasked Commander, Network Warfare Command (COMNETWARCOM) to serve as the lead agent. NETWARCOM, a hybrid type commander, "[is] responsible for organizing, training, and equipping the fleet in terms of Information Operations, Networks and Space requirements."[27] One of the first initiatives of KM was to implement a three-year, special task force pilot program directed by the Chief of Naval Operations (CNO). The program's name was Task Force Web. The program's purpose was to devise a web-enabled, networked environment that reduced existing legacy and stovepipe systems (i.e., older technologies that provide specific services), applications, and networks, thereby creating more multifunctional and interoperable applications and systems.

Implementing KM in the Fleet

As mentioned, the Navy's Numbered Fleet Commanders' were the first staffs to have KMOs assigned to them. The KMO was responsible for multiple deployable fleet units. Following the Numbered Fleet Commander assignments, KMOs billets went to Carrier Strike Groups in 2004. These officers were primarily officers previously assigned in Command, Control, Communications, Computers, Combat, and Intelligence (C5I) billets. The officers were "skilled in information management (IM) techniques, [had] operational experiences in naval warfare, and [were] able to think strategically."[28] With the C5I background, some Strike Groups placed the KMOs in the N6 (Communications Department). Others put the Knowledge Management officer in the N3 (Operations Department), while other Strike Groups placed the Knowledge Management officer directly under the Chief of Staff. In hindsight, working for the Chief of Staff gave the Knowledge Manager a much wider scope of responsibility than did the N3 or N6 departments.

The Carrier Strike Groups (CSGs) experienced positive results with their KM implementation. Therefore, the U.S. Navy decided to insert KM officers within the Expeditionary Strike Groups (ESGs). As the Knowledge Manager for Expeditionary Strike Group 3 the KM was contained within the N6 Department, but was later shifted to the Chief of Staff. The implementation plan was to adapt Ikujiro Nonaka and Hirotaka Takeuchi's SECI Model in order to initiate a "knowledge creating company" within the staff through efficient process management.

Since Knowledge Management was a new function in the ESG, it was important to explain the utility and the benefits of KM to the staff. In the beginning, there were some apprehensions. However, establishing Communities of Practice (COPs) unified the staff by enabling them to seek new ideas, solutions, experiences, lessons' learned, and areas of concern from other staff members. Inserting the Commander's expectations during the COPs facilitated timely resolutions. With successful accomplishments of simple projects mention earlier in this paper, the staff progressively pursued more difficult and timely projects. Later, the staff developed COPs for the move ashore in Bahrain, the Non-Combatant Operations in Lebanon, creating websites, and installing systems. The final project was a 15-gigabyte comprehensive Anthology encapsulating the group's one-year deployment and served as the capstone of knowledge management implementation for an Expeditionary Strike Group.

Implementing KM for the Strike Group

Familiarity with the organizational relationships, understanding connectivity, identifying subject matter experts, and evaluating experiences from business and military knowledge management accomplishments are important prerequisites to ensuring the group's success in implementing Knowledge Management. In addition, identifying and understanding people, processes, and technology within the organization can save the Navy time and money.

Simply put, there is an abundance of information today and too much information is not a good thing. Organizations need to focus on developing efficient processes to manage only essential information needed. This deliberate and necessary process of information streamlining enables an organization to concentrate specifically on actionable information. Therefore, taking the actionable information, tailoring it to the needs of the organization, and developing more efficient processes can save money and in essence, creates time by not wasting time.

Mission and Vision

Creating a knowledge-based organization that generates actionable information is essential in facilitating the Navy's determination for overall information superiority and in direct alignment with NETWARCOM's Strategic Plan.[29] In addition, optimizing the organization's intellectual capital (i.e., identifying knowledgeable subject matter experts) improves the efficiency of the organization's overall warfighting action preparations, which ultimately enabled information and decision superiority by ESG3.

The KM is a principle agent of the organization and has the responsibility to improve strategic, operational, and tactical effectiveness. This accountability encompasses not just one particular department or functionality, but the entire Strike Group (see Appendix A for an illustration of the complexity of the Knowledge Manager's scope of responsibilities). As the Knowledge Manager for ESG3, there were six primary relationships to focus on, including understanding the comprehensive network of Strike Group complexities, day-to-day interactions, technical expertise support, and mission accomplishment. Additionally, the development of 10 principles served as the groundwork to implement knowledge management based on Tactical Training Group Pacific's KM Course (see Appendix B for a list of the principles).

Battle Rhythm

One key characteristic of our enterprise was to administer the knowledge flow using the Strike Group's daily schedule, known as the Battle Rhythm (see Appendix C). A Battle Rhythm represents the actions for the strike group during the course of a 24-hour day. The significance of the Battle Rhythm is that it synchronizes all the day's events and avoids scheduling conflicts of interest, which allows appropriate personnel to take part in scheduled meetings and functions.

As the Knowledge Manager, attending various staff meetings was required in order to observe, learn, and collect data, which further allowed me to communicate information at other meetings (e.g., Air, Communications, Intelligence, Combat,) to help eliminate conflicting schedules. Specifically, during the Air meeting, the staff worked on flight operations for a certain day and, in the combat meeting, the staff scheduled a gun shoot for the same day flights were scheduled. Having attended both meetings, it facilitated the sharing of information with the combat staff that the Air staff meeting was planning a gun shoot the same day flight operations were scheduled, which resulted in the lead for each group having to work out the conflicting schedules.

Communities of Practice

One of the next first steps was to create Communities of Practice, commonly recognized as brainstorming sessions. There were a select few mandatory attendees during these sessions, but the entire staff was welcomed and encouraged to participate. Furthermore, as the Knowledge Manager, the objectives were to generate best practice measures based on the COPs' results to develop organizational efficiencies, expand knowledge sharing throughout the Strike Group, and make the appropriate information accessible to the Commander at the right time, in order for him to make the best decision.

An example of one COP was the disembarkation to a new shore facility in Manama, Bahrain. The Strike Group had little time to move its staff off the ship as *USS PELELIU* needed to continue maritime patrols. To help identify the necessary steps to disembark, the staff created another Community of Practice (COP). This second COP brainstorming process consisted of specific departments that quickly designated points of contact for specific departmental tasking. Rather than creating a checklist of action items, spreadsheets were created (Appendix D) describing the tasks, listing the points of contact, and identifying the staff's at sea and in port dates. Unlike a checklist of To-Do items, the spreadsheet created a picture of a schedule of who, what, where, when, and how the staff would move ashore.

During one of the COP sessions, it became apparent that some participants would have to go ashore early to prepare the new facilities for our arrival. Again, the spreadsheet had the at sea and in port days to work around in order to accomplish the logistical needs. Specifically, the team going ashore needed to get lodging, vehicles, office spaces, computers, phones, desks and other furniture, network connectivity, trucks, cranes, and boxes, which required a synchronized spreadsheet of events. Furthermore, establishing the new services in Bahrain required preliminary preparations, such as establishing email accounts, distributing equipment, and installing phone service for a staff of approximately 30 individuals. On a daily basis, the COP and staff principles reviewed the spreadsheet that tracked the progress for the move ashore. The effectiveness of our COP led to the successful execution of our move ashore, and, more importantly, establishing COPs became an accepted procedure for the staff.

When the ESG received word that the staff would deploy to Cyprus, we again created a COP. Having moved ashore to Bahrain one month prior to our new assignment to Cyprus, we took the work from that COP and tailored it to our deployment to Cyprus. After gathering information on what facilities were in place in Cyprus, we concluded a complete command

center was necessary. Technology-wise, nothing was in place for the ESG in Cyprus. There were no phones or networks. There was a building with electricity on the airstrip, but the staff quickly outgrew the building as the staff began to grow. Therefore, the staff set up our Joint Operations Center on a vacant gravel lot, which was approximately one-half a mile from the building on the airstrip.

The Joint Mobile Ashore Support Terminal (JMAST) became our new command and control center. The JMAST provided the commander the connectivity to coordinate actions with ships at sea, conduct video teleconferences (VTC) with embassies, military commands, and the State Department. The JMAST also provided messaging, computer networks, and satellite communications. In addition, JMAST provided reliable communications with the above-mentioned entities, which was paramount for the effective evacuation of American citizens from Lebanon. During the Non-Combatant Evacuation Operation (NEO) *USS IWO JIMA* Strike Group and 24th Marine Expeditionary Unit (MEU) participated in, the ESG-3's (now renamed CTF 59) staff of 25 personnel swelled to over 500 individuals in support of the NEO. Additional Army, Navy, Air Force, Marine Corps, and Non-Governmental Organization (NGO/s) personnel came together in a combined effort to conduct the evacuation.

Non-Combatant Evacuation (NEO) in Lebanon

In July 2006, Beirut, Lebanon came under attack. Nations around the world were in a quandary as to how they should evacuate their citizens who were in danger. News reports declared the U.S. was slow to respond and that Americans in Lebanon were asking other countries evacuating their own citizens to let American citizens their ships. Once designated as the lead military agency to evacuate American citizens, CTF 59 established an Operational Planning Team (OPT) to develop Courses of Action (COAs) to determine the most logical approach for the quickest and safest way to conduct the NEO.

Initially, the task was to evacuate approximately 5,000 American citizens in about five days. Looking at available assets (i.e., ships, aircraft, personnel, and security) begged the question: How does the CTF get more assets if needed? Since the situation in Lebanon had the interest of the President of the United States and Secretary of State, communications with embassies, ambassadors, the Secretary of State, and various government and military organizations were necessary. Coordination with the State Department, the Beirut and Nicosia embassies, Transportation Command, Strategic Command, European Command, 6th Fleet, 5th Fleet, 2nd Fleet, Central Command, and a host of other entities was completed twice daily through video teleconferencing.

Finally, using the CTF's own U.S. ships, the 24th Marine Expeditionary Unit, a couple of civilian cruise liners, and Army, Navy, Air Force units, the CTF evacuated almost 15,000 personnel in approximately two months. This egress was America's largest overseas evacuation in recent history.[30] Probably the largest challenge from a logistical point of view was arranging for food, tents, and transportation for the over 15,000 American citizens. In order to accomplish this huge task, the CTF staff coordinated with civilian and military agencies for eight weeks and safely evacuated the American citizens with zero casualties.

ESG-3 KM Anthology

This KM project captured, shared, documented, and made available to the Commander a performance-to-standard metric to measure successes and failures during the ESG's deployment. To develop a comprehensive database for the staff, five specific objectives ensured the project's utility and to simplify the staff's work efforts. First, the identity of a common application tool, one the staff was familiar with, user friendly, and was accessible on the network. Microsoft Office PowerPoint was the common denominator and afforded the necessary tools for this project. Second, the need to create practical archiving capability that permitted quick and easy

retrieval of information was necessary. At the time of the deployment, there were existing limitations placed on users of the Navy's ONE-NET network architecture, which prevented us from placing large amount of data on the server.

Third, a means to archive volumes of information while simultaneously making the information available to the staff was necessary to facilitate information cataloging. In the early stages of the Anthology, receiving large volumes of information for insertion into the project was somewhat overwhelming. Documents came via emails, softcopy, notes, and electronic files. The proper alignment of these documents in the Anthology was critical for the staff's easy access to the information.

Fourth, participation from the staff to provide ideas, likes and dislikes, and new ideas was important – it was their database. Occasionally, the staff gathered for a "show and tell" demonstration of the Anthology, to seek their feedback (see Appendix E, Fig. 3). Feedback ranged from color schemes, to cataloging information, to presentation of information; giving the staff a stake in the project and created enthusiasm for the Anthology.

Lastly, ensuring a backup capability was in place to store large amounts of information was necessary. A backup copy was stored separately, in case the project was lost or corrupted, which allowed the continuous need to add information to the Anthology without impeding user access.

Methods of Evaluation

To evaluate methods of effectiveness, a PowerPoint "dashboard" was created (see Appendix F, Fig. 1) to illustrate to the Commander the performance-to-standard metrics. In other words, the dashboard provided the Commander and staff with a quick snapshot of the ESG's efforts and allowed the group to rate its successes and failures, or strengths and weaknesses. There are several types of metrics used on dashboards. These metrics include

stoplight charts (i.e., graphic depictions that describe the situations using red, yellow, and green colors), percentages (i.e., <25%, <50%, >75%, >95%), or high, medium, and low evaluators. The metrics provided the staff with an understanding of where it needed to improve, where it might want to improve, and where it met the challenge with excellent results. If there was no standard, the staff created (e.g., pass or fail). Additionally, if the staff felt it could have done better, it developed COPs for improvement.

From a KM perspective, the dashboard provided the staff with quick access to critical information. For example, the staff could click on the icon (see Appendix F, Fig. 2) of a specific operation or event to get the specific details needed to justify the evaluation. By looking at each quadrant, the staff could evaluate its effectiveness with customers, identify and measure efficiencies with shareholders, ensure alignment with our stakeholders, and pass down a product that had some longevity. Upon completion of a specific event, lessons learned were developed, implemented, and incorporated into the Anthology as soon as practical. Lessons learned were not only documented and stored in our database, but were also placed on the Navy's master database for all fleet units to review. Communities of Practice supported our ability to search for remedies in areas were processes did not exist.

Conclusion

Although staff members can see the utility of implementing Knowledge Management, there were no concrete metrics developed outside ESG3. The role and requirements for KM use and implementation in an Expeditionary Strike Group is under study by the Center of Naval Analysis (CNA). The Navy had eight Expeditionary Strike Groups just over a year ago. As of this writing, there are only two remaining. CNA's two-year study on ESGs and KM

implementation, once completed, will provide the Navy and Marine Corps with information to determine the future for Expeditionary Strike Groups.

Additionally, Naval Archives has the Anthology of ESG3's deployment. The Anthology includes 15-gigabytes of documents, photos, videos, messages, classified documents, news reports, coalition operations, operational orders, and commendatory documents that focused on ESG3's Northern Arabian Gulf missions of protecting Oil Platforms, communicating with and training Iraqi Navy and Marine forces, working with multiple coalition partners, evacuating American Citizens from Lebanon, and more.

To date, the ESG 3 Anthology was been presented to the Navy's Knowledge Management School twice, and I have received positive feedback from students and staff in each course. This Anthology was also presented to a professor at the Naval Postgraduate School and received similar results. The staff's KM developments during the span of the year were forwarded to the Department of the Navy's Chief Information Officer (CIO) and have been incorporated into the Navy's Knowledge Management conferences in order to share the ESG3's information.

Knowledge Management theory created the process of identifying critical information, applying specific requirements, recognizing specific content, which create information flow for an organization. The integration of the Knowledge Manager, in the U.S. Navy, created a turbulent situation at the outset, but in the closing stages of the pilot program, it appears to be a success. Knowledge Management is decision-making based on actionable information, as well as clearly understanding the actions taken. Furthermore, a Knowledge Management organization identifies, creates, captures, shares, analyzes, and leverages knowledge from both explicit and tacit resources. Knowledge sharing is a fundamental benefit of effective Knowledge Management. Knowledge Management was not a one-person task force. It took the entire staff

to implement the process successfully. Interestingly enough, sharing knowledge began to increase exponentially as the staff grew together.

The KM process does not/did not necessarily have an end state. Processes within the organization will continue to evolve and will require improvement as the mission and people of Expeditionary Strike Group 3 change and as the Navy continues to increase the training courses for Knowledge Management. Currently, Tactical Training Group Pacific (TTGP), in San Diego, carries the mantle as the Center of Excellence for Knowledge Management. Additionally, the Naval Postgraduate School in Monterey, California, offers a Knowledge Superiority certificate to students who complete the one-year curriculum. Furthermore, the Navy Knowledge Online (NKO) website has KM courses open to anyone with NKO access. Upon completion of these courses, a certificate remains on file in the NKO database.

At the conclusion of this assignment, the Commander, Major General Carl B. Jensen, USMC, declared "the new field of knowledge management has been successfully introduced to the amphibious fleet." Today, Knowledge Managers' are assigned to all numbered fleet staffs, all carrier strike group staffs, all expeditionary strike group staffs, and the Pentagon staff. Knowledge Managers' can step back and look at the overall picture rather than concentrating on a specific job skill (e.g., intelligence, communications, administration), seek efficiencies for existing staff processes, and support the staff's providing the Commander with the right information, at the right time, so the Commander can make the best decision.

Endnotes

[1] George D. Bieber, NETWARCOM's Knowledge Management Team, Info Domain, Fall 2006, p 21

[2] Navy Officers' are assigned designators for their specific communities. These designators are similar to the Marine Corps Military Occupation Specialties (MOS).

[3] Qualifications for Battle Watch Captain and Air/Surface Watch Officer qualifications were developed to ensure watch officers were properly trained and prepared before assuming the watch. Standard Operating Procedures varied from procedures to set up a videoteleconferencing session to standardizing training briefs for the staff.

[4] U.S Sea Services, A Cooperative Strategy for 21st Century Seapower, p 17.

[5] John W. Creswell, Qualitative Inquiry and Research Design: Choosing Among Five Traditions, (Sage Publications, 1998, 61.

[6] Meridith Levinson, "ABC: An Introduction to Knowledge Management (KM), CIO, no date.

[7] Jay Liebowitz, Knowledge Management Handbook, (CRC Press: London), 1-3.

[8] Bryan Bergeron, Essentials of Knowledge Management, (Wiley: John Wiley & Sons, 2003), 198.

[9] John Hearne & Christine Carobine, "A Practitioners' Guide to KM, CHIPS Magazine, Oct-Dec 2007.

[10] Dr. Ramon C. Barguin, "The Army and KM," 30 Sept 2004, http://www.b-eye-network.com/view/328 (15 March 2007).

[11] Ikujiro Nonaka, The Knowledge-Creating Company (Oxford University Press, 1995), 43.

[12] http://www.tomdavenport.com/about.html

[13] http://www.laurenceprusak.com/bio.html

[14] Ikujiro Nonaka, Enabling Knowledge Creation (Oxford University Press, 2000), backcover.

[15] Irma Becerra-Fernandez, Knowledge Management: Challenges, Solutions, and Technologies, (Princeton Hall, 2004), 2.

[16] http://carey.jhu.edu/faculty/index.cfm?i=10242

[17] John McCormick, "5 Big Companies that got Knowledge Management Right", CIO Insight, 5 October 2007

[18] Nathan Shedroff, "An Overview of Understanding"

[19] Ikujiro Nonaka, The Knowledge Creating Company (Oxford University Press, 1995), 70-73.

[20] Ibid, 60

[21] Ibid, 59

[22] Ibid, 59

[23] Ibid, 71

[24] Department of the Navy Knowledge Management Strategy, 20 October 2005.

[25] Ibid

[26] Ibid

[27] Beiber, 22.

[28] John Hearne, "Using Knowledge Management Afloat to give the Warfighting a Knowledge Edge, CHIPS Magazine, July-Sept 2005, 17

[29] Donna Lacy, NETWARCOM Strategic Plan: Information Superiority for the Warfighter, Info Domain Magazine, Spring 2007, pp 24-25

[30] http://gao.gov/htext/d07893r.html. (Note: other resources indicate the Lebanon NEO is the largest overseas evacuation since Vietnam.

Bibliography

Bergeron, Bryan. Essentials of Knowledge Management. New Jersey: John Wiley & Sons, Inc.,

2003.

Coakes, Elayne. Knowledge Management: Current Issues and Challenges. London: IRM Press,

2003.

Creswell, John W. Qualitative Inquiry and Research Design: Choosing Among Five Traditions.

Sage Publications, 1998.

Dalkir, Kimiz. Knowledge Management in Theory and Practice. Elsevier, Inc.: New York,

2005.

Davenport, Thomas H. and Prusak, Laurence. Working Knowledge: How Organizations

Manage What They Know. Boston: Harvard Business Press, 2000.

Davenport, Thomas H. and Prusak, Laurence. What's the Big Idea: Creating and Capitalizing on

the Best Management Thinking? Boston: Harvard Business School Press, 2003.

Davenport, Thomas H. "Some Principles of Knowledge Management."

http://www.itmweb.com/essay538.htm#KM%20expensive, (26 September 2007).

Debowski, Shelda. Knowledge Management. Wiley: Australia, 2006.

Department of the Navy. Information Management and Information Technology Strategic Plan,

2006-2007.

Drucker, Peter F. Classic Drucker. Boston: A Harvard Business Review Book, 2006.

Gorelick, Carol, Milton, Nick, and April, Kurt. Performance Through Learning: Knowledge

Management in Practice. Boston: Elsevier Butterworth Heinemann, 2004.

Hacker, Diana. A Writer's Reference. Boston: Bedford/St Martin's, 1999.

Knowledge Management: A New Competitive Asset. Washington, DC, 1998.

Labovitz, George and Rosansky, Victor. <u>The Power of Alignment: How Great Companies Stay Centered and Accomplish Extraordinary Things</u>. New York: John Wiley & Sons, Inc., 1997.

Liebowitz, Jay. <u>Knowledge Management Handbook</u>. CRC Press: Washington, DC, 1999.

Lopez, Kimberly. "Measurement for Knowledge Management." 24 April 2007. http://www.apqc.org, (22 September 2007).

Nonaka, Ikujiro and Takeuchi, Hirotaka. <u>The Knowledge-Creating Company: How Japanese Companies Create the Dynamics of Innovation</u>. New York: Oxford University Press, 1995.

Nonaka, Ikujiro and Nishiguchi, Toshihiro, ed. <u>Knowledge Emergence: Social, Technical, and Evolutionary Dimensions of Knowledge Creation</u>. Oxford: University Press, 2001.

O'Dell, Carla and Grayson, C. Jackson Jr. <u>If Only We Knew What We Know: The Transfer of Internal Knowledge and Best Practice</u>. New York: The Free Press, 1998.

Probst, Gilbert, Raub, Steffen, and Romhardt, Kai. <u>Managing Knowledge: Building Blocks for Success</u>. New York: John Wiley & Sons, LTD, 2000.

Rumizen, Melissie Clemmons. <u>The Complete Idiots Guide to Knowledge Management</u>. CWI Publishing Enterprises: Madison, WI, 2002.

Salch, Megan. "Five Tips to Measure the Impact of Knowledge Management." April 2004. http://www.geofunders.org/index.cfm, April 24, 2007.

Sivan, Yesha. (2001). "Nine Keys to a Knowledge Infrastructure: A Proposed Analytic Framework for Organizational Knowledge Management." <u>Center for Information Policy Research, Harvard University</u>. 2001. http://www.pirp.harvard.edu, 24 April 2007.

Srikantaiah, T. Kanti and Koenig, Michael E.D., ed. <u>Knowledge Management: For The Information Professional</u>. Medford: New Jersey, 2000.

Stewart, Thomas A. The Wealth of Knowledge: Intellectual Capital and the Twenty-first

Century Organization. New York: Currency Books, 2001.

Stewart, Thomas A. Intellectual Capital: The New Wealth of Organizations. New York:

Currency Books, 1999.

Tecker, Glenn H., Eide, Kermit M, and Frankel, Jean S. Building a Knowledge-Based Culture:

Using Twenty-first Century Work and Decision-Making Systems in Associations.

Washington DC: American Society of Association Executives, 1997.

APPENDIX A

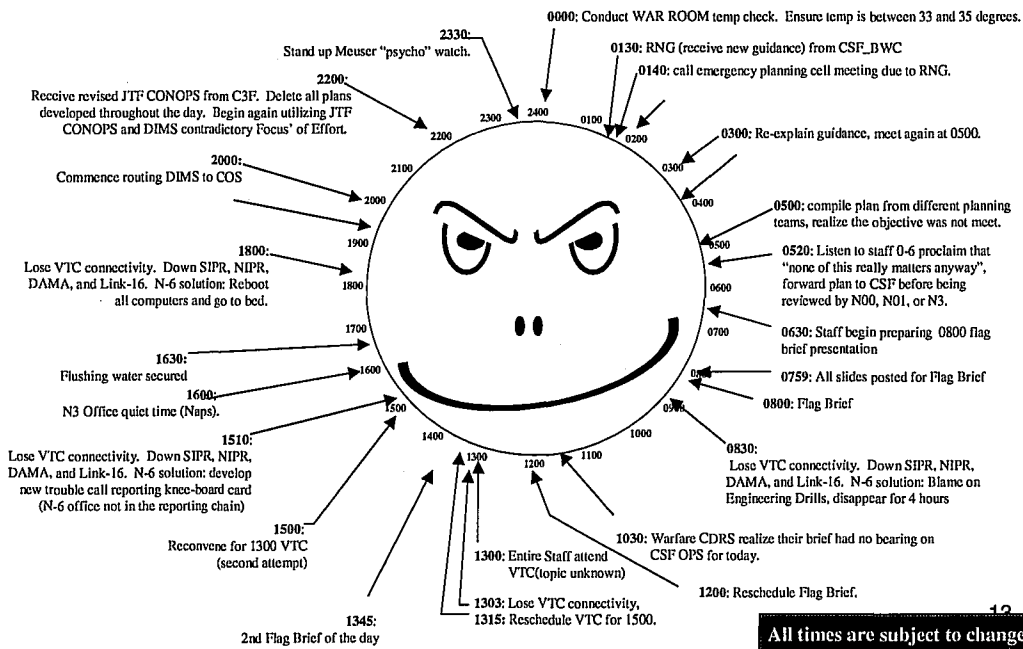## KM MILITARY AND CIVILIAN AGENCY AFFILICATIONS

WITHIN EXPEDITIONARY STRIKE GROUP 3
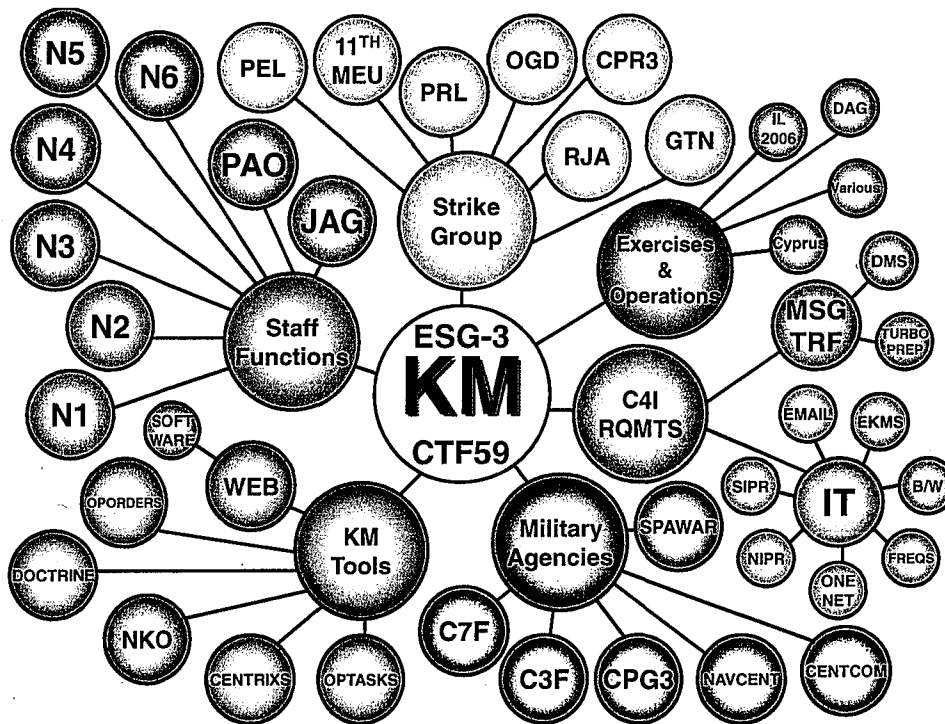
APPENDIX B

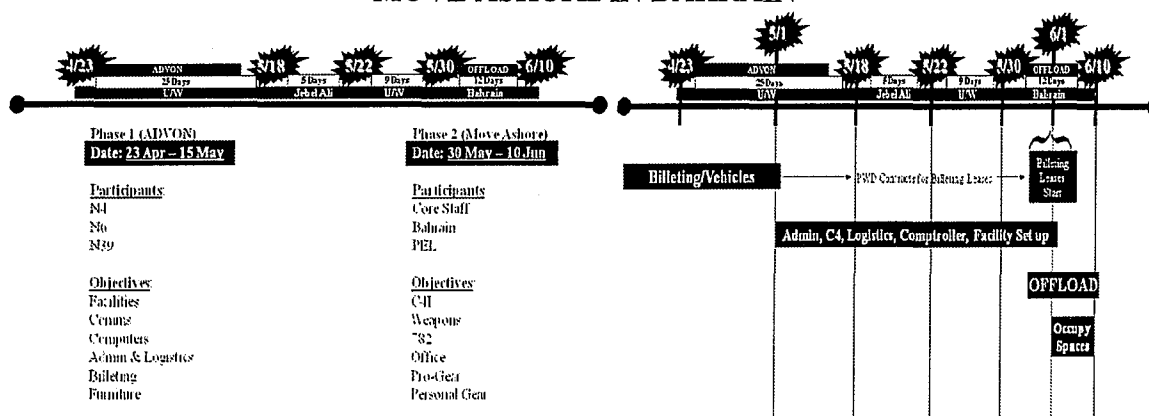## 10 STRATEGIC PRINCIPLES

Leadership buy-in	Effectively institutionalizing knowledge management in the organization requires that KM needs to be the boss's priority. Therefore, the staff will participate it its utility.
Understand Command's Mission	Supportive of the commander's mission and vision gave allowed by to conform KM to his responsibilities
Understanding outside affiliations	Being familiar with the relationships inside and outside the staff facilitated an understanding of agencies that supported our mission and deployment (e.g. SPAWAR, Port Engineers, installation teams, etc.) all providing a better understanding of our limitations, capability restrictions, and interoperability concerns.
Knowledge of IT resources and IT in general	Understanding the connectivity (e.g. network topologies, bandwidth allocations, operating systems, software applications, the Department of Defense's and Department of the Navy's policies, and the Navy/Marine Corps' Internet) provided a baseline on the command's IT resources.
Realizing Capabilities and Limitations	Looking at the quality and quantity of qualified people assisted in determining capabilities and limitations; reviewing the current infrastructure of training programs, qualification programs, and quality of work and efficiencies in processes.
Promoting KM within the staff	It was necessary to develop a mission, vision, and introductory statement to the staff, offering ideas and solutions to implement KM within the organization.
Develop Communities of Practice (COP)	Creating Communities of Practice were avenues to generate ideas and solutions, identify areas of concern, and develop strategies to make the organization more efficient. COPs included military and civilian personnel.
Documentation	Through documentation, the Commander and his staff can analyze areas of concern and track measurements of successes and failures through metrics.
Understanding the budget	It is important to understand the budget allocation within the Organization. Seeking state-of-the-art technology solutions may require budget realignments.

APPENDIX C

EXAMPLE OF A STRIKE GROUP BATTLE RHYTHM

0000: Conduct WAR ROOM temp check. Ensure temp is between 33 and 35 degrees.

2330: Stand up Meuser "psycho" watch.

0130: RNG (receive new guidance) from CSF_BWC

0140: call emergency planning cell meeting due to RNG.

2200: Receive revised JTF CONOPS from C3F. Delete all plans developed throughout the day. Begin again utilizing JTF CONOPS and DIMS contradictory Focus' of Effort.

0300: Re-explain guidance, meet again at 0500.

2000: Commence routing DIMS to COS

0500: compile plan from different planning teams, realize the objective was not meet.

1800: Lose VTC connectivity. Down SIPR, NIPR, DAMA, and Link-16. N-6 solution: Reboot all computers and go to bed.

0520: Listen to staff 0-6 proclaim that "none of this really matters anyway", forward plan to CSF before being reviewed by N00, N01, or N3.

0630: Staff begin preparing 0800 flag brief presentation

1630: Flushing water secured

0759: All slides posted for Flag Brief

1600: N3 Office quiet time (Naps).

0800: Flag Brief

1510: Lose VTC connectivity. Down SIPR, NIPR, DAMA, and Link-16. N-6 solution: develop new trouble call reporting knee-board card (N-6 office not in the reporting chain)

0830: Lose VTC connectivity. Down SIPR, NIPR, DAMA, and Link-16. N-6 solution: Blame on Engineering Drills, disappear for 4 hours

1500: Reconvene for 1300 VTC (second attempt)

1030: Warfare CDRS realize their brief had no bearing on CSF OPS for today.

1300: Entire Staff attend VTC(topic unknown)

1200: Reschedule Flag Brief.

1303: Lose VTC connectivity, 1315: Reschedule VTC for 1500.

1345: 2nd Flag Brief of the day

All times are subject to change

APPENDIX D

COMMUNITY OF PRACTICE ILLUSTRATION FOR ESG-3'S

MOVE ASHORE IN BAHRAIN

APPENDIX E

TEMPLATE FOR ESG-3'S OPERATIONS, EXERCISES, AND EVENTS

Lebanon NEO

Archeological	Formal Base	Summary	Capstone
Data	Information	Actionable Information	Decision Making

HOW THIS WORKS

Archeological	Formal Base	Summary	Capstone
Data	Information	Actionable Information	Decision Making
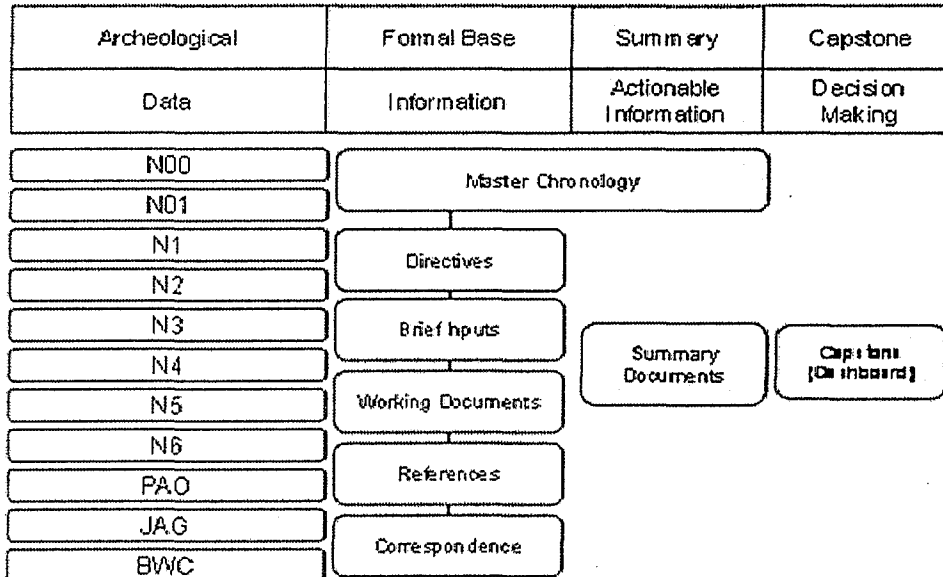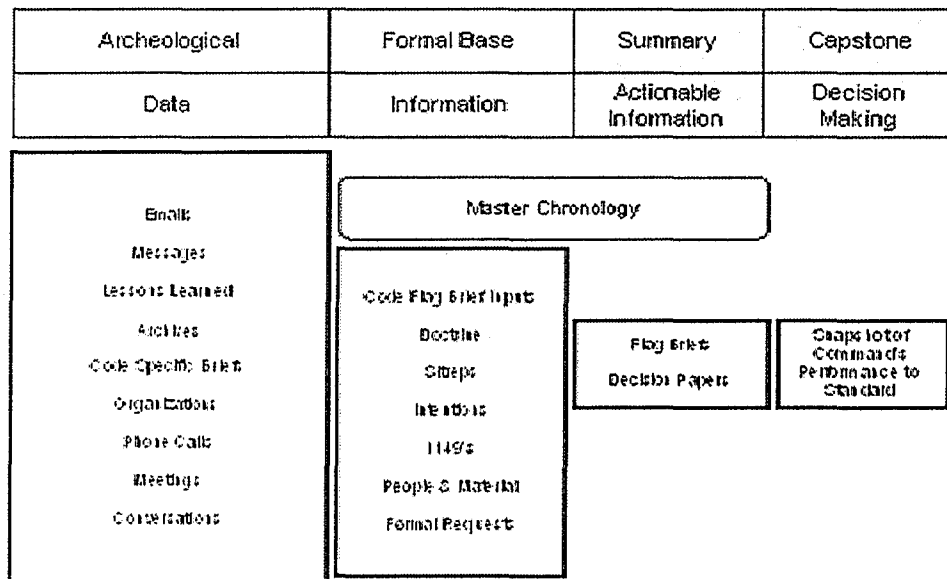
Figure 3: Master Directory for specific operations
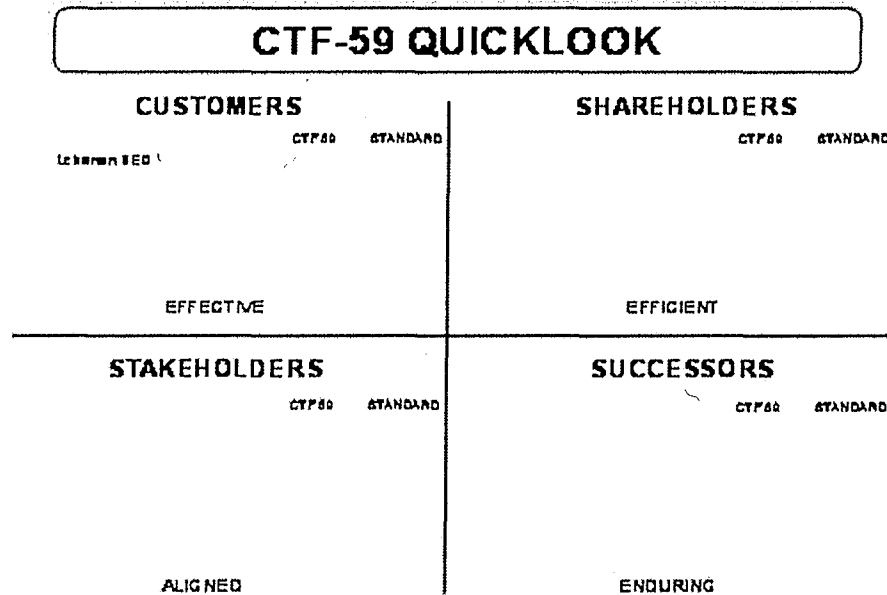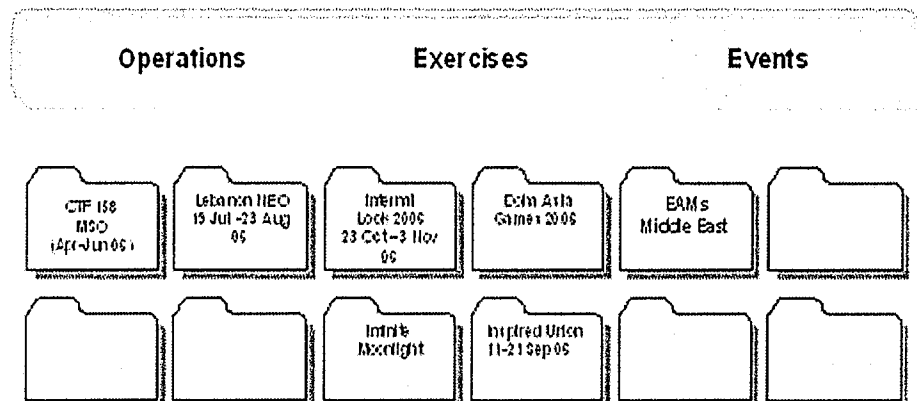
APPENDIX F

DASHBOARD PRESENTATION

Figure 1: Dashboard Presentation

Figure 2: Overall Folder Structure Database